

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended): A method for designing an integrated circuit, comprising:
receiving data specifying a plurality of interconnects and components of a design of an integrated circuit; and
optimizing the design of the integrated circuit, wherein data specifying the plurality of interconnects and devices of the integrated circuit is optimized based on at least one of bandwidth, latency, scalability, position of devices and isochronous interconnect configuration.
2. (original): The method as described in claim 1, wherein the optimized data is programmed into a self-programmable integrated circuit so as to provide the designed integrated circuit.
3. (original): The method as described in claim 1, wherein the optimized data is utilized to synthesize an integrated circuit having the specified design.
4. (original): The method as described in claim 1, wherein the optimized design includes a specified characteristic for the interconnect, wherein the specified characteristic includes at least one of bandwidth, latency and scalability.
5. (currently amended): The method as described in claim 1, wherein a direct connectivity definition, derived from the optimized data, is utilized to synthesize an integrated circuit.
6. (original): The method as described in claim 1, wherein optimizing includes at least one of arranging components of the integrated circuit and specifying

bandwidth between components.

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7. (original): The method as described in claim 6, wherein components are arranged based on latency, scalability, timing considerations, power considerations, data switching and bandwidth.
8. (original): The method as described in claim 1, wherein optimizing is performed without user intervention by an agent.
9. (original): The method as described in claim 1, wherein the integrated circuit is at least one of an application specific integrated circuit (ASIC) and multiple application specific integrated circuits (ASICs).
10. (original): The method as described in claim 1, wherein interconnects not specified by a user are automatically configured by an agent.
11. (currently amended): A self-programmable integrated circuit, comprising:
a processor suitable for performing a program of instructions, the processor accessible via ~~an interconnect~~ a first interconnect;
at least two components of the integrated circuit, the components communicatively connected via ~~an interconnect~~ a second interconnect; and
a memory suitable for storing a program of instructions, wherein the program of instructions configures the processor to optimize the integrated circuit based on heuristic data indicating past utilization of components of the integrated circuit, wherein the heuristic data is optimized based on at least one of bandwidth, latency, scalability, and isochronous interconnect configuration.
12. (original): The self-programmable integrated circuit as described in claim 11, wherein the components include at least one of a core, functional block and logical block.

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13. (currently amended): The self-programmable integrated circuit as described in claim 11, wherein the heuristic data includes data indicating amount of data transferred between a first component and a second component over a ~~first~~ second interconnect.

14. (currently amended): A self-programmable integrated circuit, comprising:
a processor suitable for performing a program of instructions, the processor
accessible via a first interconnect;
at least two components of the integrated circuit, the components
communicatively connected via a second interconnect; and
a memory suitable for storing a program of instructions;
wherein the program of instructions configures the processor to optimize the
integrated circuit based on heuristic data indicating past utilization of
components of the integrated circuit,
wherein the heuristic data includes data indicating amount of data transferred
between a first component and a second component over the second
interconnect, and
~~The self-programmable integrated circuit as described in claim 13, wherein~~
when the data indicates indicating the amount of data transferred over
the first interconnection second interconnect is less than an initially
determined bandwidth, bandwidth of the first interconnection second
interconnect is decreased.

15. (currently amended): A self-programmable integrated circuit, comprising:
a processor suitable for performing a program of instructions, the processor
accessible via a first interconnect;
at least two components of the integrated circuit, the components
communicatively connected via a second interconnect; and
a memory suitable for storing a program of instructions;
wherein the program of instructions configures the processor to optimize the
integrated circuit based on heuristic data indicating past utilization of

components of the integrated circuit, and

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The self-programmable integrated circuit as described in claim 11, wherein
when the data indicates indicating an amount of data to be transferred
over the ~~first interconnection~~ second interconnect is greater than an
initially determined bandwidth, bandwidth of the ~~first interconnection~~
second interconnect is increased.

16. (currently amended): An integrated circuit design system, comprising:
an electronic data storage device including a database having data describing
integrated circuit component characteristics, firm macros and soft
macros, wherein the data is optimized based on at least one of
bandwidth, latency, scalability, and isochronous interconnect
configuration; and
an agent implemented by a processor, the agent suitable for providing a
design environment on an information handling system in which the
design environment enables a user to design an integrated circuit to
arrive at integrated circuit design data, the agent suitable for
optimizing the integrated circuit design data utilizing the database
having data describing integrated circuit component characteristics,
firm macros and soft macros.
17. (currently amended): The integrated circuit design system as described in
claim 16, wherein firm macros include a design of a logic function for
specifying how logic elements are interconnected and specifies physical
pathways and wiring patterns between components.
18. (currently amended): The integrated circuit design system as described in
claim 17, wherein soft macros include a design of a logic function that
specifies how logic elements are interconnected, but not physical wiring
pattern on the chip.
19. (currently amended): The integrated circuit design system as described in

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~~claim 11~~ claim 18, wherein heuristic data is utilized to derive at least one of the firm macro and soft macro.

20. (currently amended): The integrated circuit design system as described in ~~claim 16~~ claim 18, wherein heuristic data includes data from previous circuit designs.
 21. (currently amended): The integrated circuit design system as described in ~~claim 16~~ claim 18, wherein heuristic data includes data derived from operation of a circuit.
 22. (original): The integrated circuit design system as described in claim 16, wherein optimizing includes partitioning based on cost considerations.
 23. (original): The integrated circuit design system as described in claim 16, wherein at least one of a single integrated circuit and multiple integrated circuit solution is provided.
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